

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-024447

(43)Date of publication of application : 26.01.2001

(51)Int.Cl.

H03F 1/32

H03F 3/24

H03G 3/30

H04B 1/04

(21)Application number : 11-195317

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(22)Date of filing : 09.07.1999

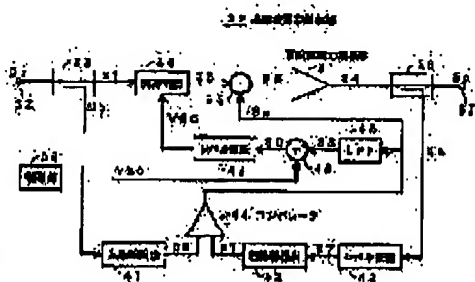
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### (54) METHOD FOR COMPENSATING DISTORTION AND RADIO COMMUNICATION APPARATUS

(57)Abstract:

**PROBLEM TO BE SOLVED:** To reduce the non-linear distortion of a power amplifier without causing any distortion due to modulation, and to surely reduce non-linear distortion independent of the power supply voltage of the power amplifier which can not be detected from the envelope of an input signal.

**SOLUTION:** An adding circuit 35 adds a difference signal Sa between an input envelope detection signal D5 and an output envelope detection signal D7 from a comparator 44 to a high frequency signal S2 from a gain control circuit 34, and a power amplifier 31 amplifies a high frequency signal S3 from the adding circuit 35. When an environmental parameter such as a temperature of a power supply voltage is not changed, the difference signal Sa is constituted of only distortion components, and when the environmental parameter is changed, the difference signal Sa is constituted of the sum of the distortion components and offset components due to the gain fluctuation of the power amplifier 31. Only the offset components in the difference signal Sa are extracted by a low pass filter 45, and the gain of a gain control circuit 34 is controlled so that a signal 88 as the offset components can be turned into zero by a gain control signal VGC to which the signal S8 is added.



### LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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